

Advanced Technology Ordnance Surveillance (ATOS) Advanced Concept Technology Demonstration (ACTD)

Implementation Directive

APPROVALS

Mr. JOSEPH J. EASH, III Date
Deputy Under Secretary
of Defense (AS &C)

/s/

DANIEL J. PETROSKY, LTG, USA Date
Chief of Staff
U.S. European Command

J. F. AMERAULT Date
Vice Admiral, U.S. Navy
Deputy Chief of Naval Operations
(Fleet Readiness and Logistics)

G.P. NANOS, JR. Date
Vice Admiral, U.S. Navy
Naval Sea Systems Command

/s/

WADE H. MCMANUS, Jr. Date
Major General, U.S. Army
Operations Support Command

ACTD DESCRIPTION AND OBJECTIVES

The ATOS ACTD will demonstrate an automated joint munitions inventory surveillance capability which will allow theater logisticians to monitor the environment and distribution of selected critical and/or high-mobility munitions. ATOS will monitor the temperature and humidity history of munitions with automated transmission to a data warehouse at selected intervals, providing ordnance technicians insight into whether selected munitions have been exposed to conditions which may adversely impact their reliability. ATOS data will allow logisticians to track selected munitions in transit from storage environment to operating units using existing databases. This capability will significantly enhance theater ordnance visibility, accountability, safety and life cycle management from sub-component to complete rounds. The technology is expected to have broader applications to include Category I munitions, medical and biological supplies, perishable subsistence, and other environmentally sensitive commodities.

ATOS will consist of Radio Frequency Identification (RFID) "tags" including multiple sensors; both fixed and hand-held readers; a pre-processor data base; and appropriate software interfaces. The RFID tag will be credit-card-sized, affixed to designated assets or pallets. The tag is intended to be low-cost (\$5-15), disposable, and maintenance-free with a service life of at least five years. It will monitor environmental conditions by transmitting sensor data at user defined intervals. The tag can store data for up to 60 days when not in communication with a reader. The tag will include temperature and humidity sensors along with two general-purpose standard sensor interfaces which will allow additional environmental sensors such as shock and vibration. The readers communicate with the tags and the pre-processor database. The readers will send data to the pre-processor database via a coaxial or RF Local Area Network (LAN). The pre-processor database aggregates and sends tag data to service Automated Information Systems (AIS).

APPROACH

ATOS is a five-year ACTD with three years dedicated to development, demonstration, and assessment of relevant technologies and two years for transition of the system to acquisition. Military utility assessment will be reported by USEUCOM during the third program year to Deputy Under Secretary of Defense Advanced Systems and Concepts (DUSD AS&C), Joint Staff (JS-8) and participating services. This report will address system effectiveness and suitability in resolving theater ordnance reliability and location reporting requirements.

The ATOS tag circuit, including sensor interfaces, microprocessor, memory, and UHF RF section is intended to be a single Application Specific Integrated Circuit (ASIC) to reduce unit cost and increase reliability.

During the development and assessment phase, ATOS will be tested using the CONUS/EUCOM ammunition supply chain pipelines. Within EUCOM, it will be evaluated using existing storage and transportation infrastructure during normal operations and/or exercises as feasible. Prior to transition, ATOS will be certified to interface with service AIS and by appropriate DoD safety authorities. Host Nation approval will be obtained as required.

ACTD TRANSITION

The Navy, as the lead for all transition activities, will designate a program Transition Manager. This individual will lead the effort to ensure joint acceptance of ATOS and certification of the system for joint usage on selected service systems. As a program residual, a sufficient number of ATOS systems will be provided for EUCOM to address most critical shortfalls. The exact number and nature will be identified in the program management plan.

KEY PARTICIPANTS, ROLES, AND RESPONSIBILITIES

The ATOS ACTD is a Department of the Navy (Naval Sea Systems Command, Naval Surface Warfare Center, Indian Head Division) initiative sponsored by the United States European Command. Program support will be provided by the U.S. Army Materiel Command, Operations Support Commands (OSC) Munitions and Armaments Command (MAC) and Defense Ammunition Center (DAC). Organizational roles and key responsibilities include:

1. Program Oversight:

- Deputy Under Secretary of Defense, Advanced Systems and Concepts (DUSD(AS&C))
- United States European Command (USEUCOM) Chief of Staff

2. Operational Sponsor: USEUCOM

- Designates the Operational Manager (OM)
- Coordinates activities associated with the Requirements Integrated Product Team (IPT) and the Operational Demonstration and Assessment IPT
- Lead for development of initial CONOPS related to ACTD demonstration
- Assesses and reports ATOS military utility

3. Technical Manager: Naval Sea Systems Command, Naval Surface Warfare Center, Indian Head Division

- Provides ACTD program management
- Coordinates development activities including lead of Systems Development, Modeling, and AIS IPTs
- Coordinates with other service Quality Assurance/Quality Evaluation organizations on issues relating to munitions selected in demonstration
- Provide training resources and support associated with use of program technologies

4. Lead Service/Transition Manager: Naval Sea Systems Command, Naval Surface Warfare Center, Indian Head Division

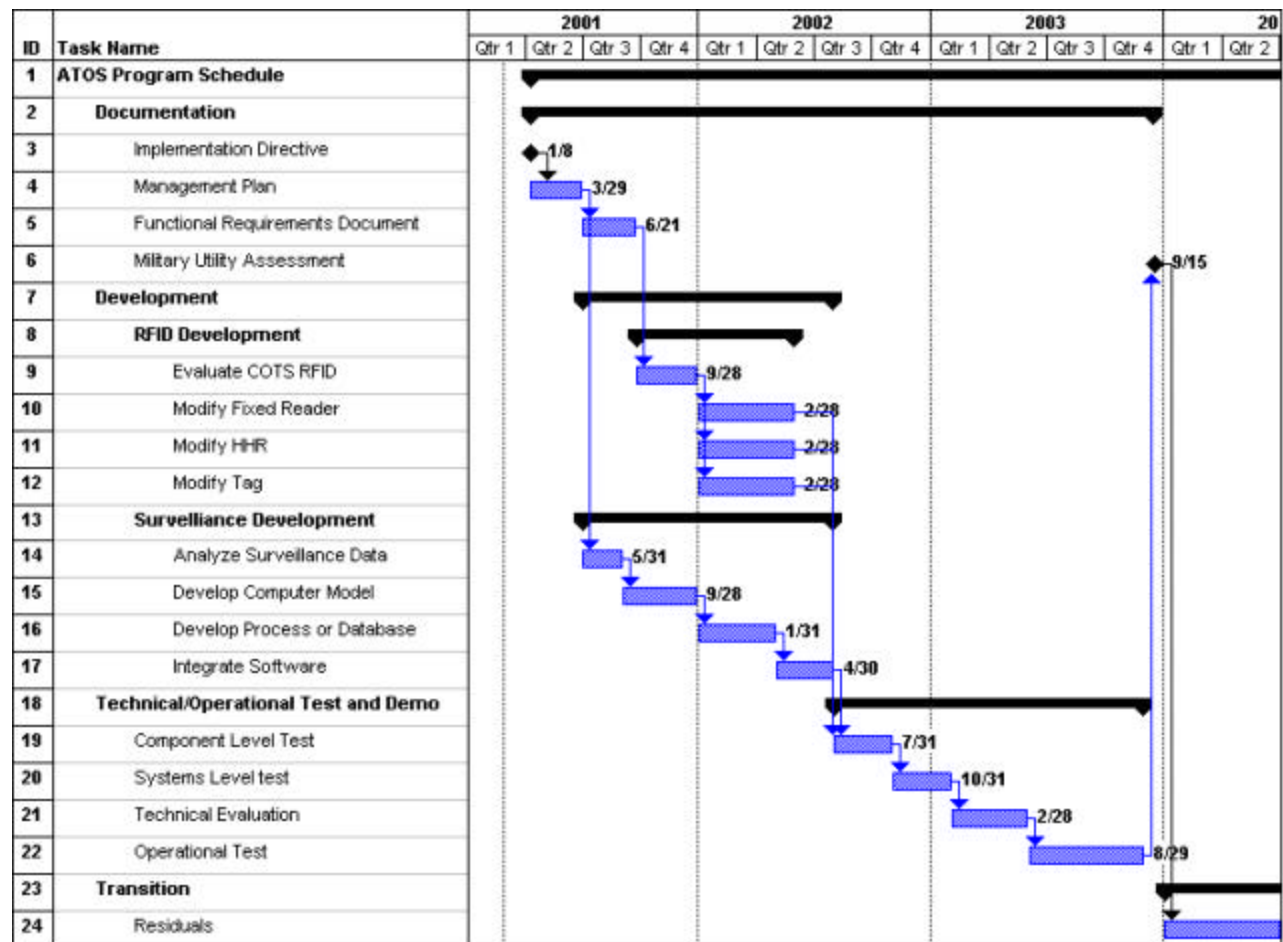
- Designates program transition manager
- Coordinates joint usage and acquisition activities
- Lead for development of system CONOPS supporting service/joint fielding

5. U.S. Army Operations Support Command (OSC)

- Coordinates CONOPS development and provides two CONUS magazines for CONUS related demonstrations
- Provides support in the area of Quality Assurance Specialty Ammunition Surveillance (QASAS)
- Supports Lead Service activities related to transition

FUNDING

Organization/Agency	FY01	FY02	FY03	FY04	FY05
Department of the Navy	3.9M	4.7M	4.0M	3.8M	3.8M
DUSD AS&C		1.0M	.6M	.62M	.62M
Total	3.9M	5.7M	4.6M	4.42M	4.422M

SCHEDULE

DIRECTION FOR COMPLETION OF ACTD MANAGEMENT PLAN

The ACTD Management Plan will be completed within ninety days from final signature of the Implementation Directive. The ACTD Functional Requirements Document will be complete ninety days after completion of the Management Plan.